

BOROK, M. Ye., inzhener

Equipment and machinery for road maintenance units. Avt.dor.18
no.4:32-33 J1-Ag'55. (MLRA 8:11)

(Road machinery)

BOROK, M.Ye., inzhener.

Electric heating of reinforced concrete piles. Avt. der. 19 no.2:
10-12 V '56. (MIRA 9:6)

(Concrete piling) (Electric heating)

BOROK, M.Ye., inzhener.

Conference of innovators. Avt. dor. 20 no.2:6 P '57. (MLBA 10:4)
(Road construction--Congress)

SOKOLOV, V.L.; BOROK, M.Ye.

New design of form-rails. Avt. dor. 21 no.5:24-25 My '58.

(MIRA 11:6)

(Road machinery)

Ve.
BOROK, M.; GRIDUNOV, A.

New equipment for the care of roads. Avt. dor. 21 no.5:30-32

My '58.

(MIRA 11:6)

(Road machinery)

BOROK, M.Ye., inzh.; GRIDUNOV, A.S.

Unit for erecting precast reinforced concrete bridge spans. Avt.dor.
21 no.11:30-31 N '58. (MIRA 11:12)
(Bridges, Concrete) (Cranes, derricks, etc.)

SIMONENKO, Petr Kirillovich; GOROVY, Mikhail Yerofeyevich; KARNAUKH, Vitaliy Ivanovich; PRUSOV, Vsevolod Vasil'yevich; BOYTSOV, Vsevolod Ivanovich; BOROK, M.Ye., red.; GALAKTIONOVA, Ye.N., tekhn. red.

[Handbook for road construction engineers] Spravochnik inzhenera mekhanika dorozhnika. Moskva, Nauchno-tekhn. izd-vo M-va Avtomobil'nogo transp. i shosseirnykh dorog RSFSR, 1961. 375 p. (MIRA 14:8)
(Road machinery)

L 20629-66 EWP(k)/ENT(m)/T/EWP(e)/EWP(w)/EWP(t) IJP(c) JH/JD/HW

ACC NR: AP6010091

SOURCE CODE: UR/0129/66/000/003/0029/0032

AUTHOR: Borok, V. A.; Zaytseva, R. D.; Karpman, G. M.; Perkas, M. D.

ORG: TsNIICHERMET

TITLE: Strengthening and weakening of nickel alloys containing aluminum oxide

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1966, 29-32

TOPIC TAGS: nickel, nickel alloy, aluminum oxide containing alloy, alloy strengthening, alloy weakening, alloy hardness

ABSTRACT: Carbonyl nickel powder mixed with α -aluminum oxide or γ -aluminum oxide powder was compacted, sintered in a hydrogen atmosphere, and then extruded at 1050°C. The obtained alloys of nickel with 0.5–7% γ -Al₂O₃ and nickel with 3.0% α -Al₂O₃ were tested for hardness and mechanical strength. Results of the tests showed that as the γ -Al₂O₃ content increased to 3 and 7%, the yield strength of extruded nickel increased to 29.4 and 40 kg/mm², respectively, compared to the yield strength of 18 kg/mm² for extruded nickel without γ -Al₂O₃ powder. The corresponding figures for the hardness were HRB 76, 87, and 45, respectively. Alpha-Al₂O₃, whether added as powder or formed from γ -Al₂O₃ with high-temperature annealing (above 1100°C) of the nickel- γ -Al₂O₃ alloy, had only slight effect on the yield strength and hardness of the alloy. In nickel and its alloys with α -Al₂O₃, the hardness decreased after annealing at 400–600°C, but in alloys with γ -Al₂O₃, the hardness sharply decreased

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UDC: 669.24

L 20629-66

ACC NR: AP6010091

only after annealing at 1100C. This showed that dispersed inclusions of $\gamma\text{-Al}_2\text{O}_3$ significantly increased the temperature of the beginning of weakening of nickel. Nickel- $\gamma\text{-Al}_2\text{O}_3$ alloy cold-strained with a reduction of 80% has a much higher hardness than extruded alloys. However, the hardness of cold-strained alloys decreased sharply after annealing at 400—450C, and in extruded alloys, after annealing at above 1000C. This seems to confirm the assumption that a high cold reduction disrupts the bonds between the alloy base and $\gamma\text{-Al}_2\text{O}_3$ particles, as a result of which the weakening of the alloys with $\gamma\text{-Al}_2\text{O}_3$ proceeds as in alloys with $\alpha\text{-Al}_2\text{O}_3$. With a lower cold reduction (20—30%), weakening of alloys with $\gamma\text{-Al}_2\text{O}_3$ begins at the same temperatures as in extruded alloys. The significant advantages of nickel alloys containing $\gamma\text{-Al}_2\text{O}_3$ inclusions become most pronounced in prolonged tests at high temperatures. The best results were obtained on an alloy containing 5% $\gamma\text{-Al}_2\text{O}_3$ which, under a stress of 3 kg/mm² at 800C, had a rupture life of 625 hr, i.e., 70 times longer than that of pure nickel. Orig. art. has: 4 figures. [MS]

SUB CODE: 11/ SUBM DATE: ncne/ ORIG REF: 001/ OTH REF: 004/ ATD PRESS: 4224

Card 2/2

BOBOK, V.M., inzh.; LESECHINSKIY, A.I., inzh.

Small a.c. plug-type IMVSh pulse relay. Avtom. telem. i svyaz' 4
no.9:6-8 S '60. (MIRA 13:9)
(Electric relays) (Railroads--Electric equipment)

BOROK, V.M., inzh.; LESHCHINSKIY, A.I., inzh.

Plug-type condenser blocks for repeaters of track pulse relays.
Avt., telem. i sviaz' 5 no.1:14-17 Ja '61. (MIRA 14:3)
(Railroads—Signaling) (Railroads—Electronic equipment)

BOROK, V.M.; LESHCHINSKIY, A.I.

Plug-type relay subjected to vibration. Avtom., telem.i svyaz'
5 no.7:32-34 JI '61. (MIRA 14:10)

1. Vedushchiy konstruktor konstruktorskogo byuro Glavnogo
upravleniya signalizatsii i svyazi Ministerstva putey soobshcheniya
pri Leningradskom elektrotekhnicheskom zavode Ministerstva putey
soobshcheniya (for Borok). 2. Zamestitel' glavnogo konstruktora
Leningradskogo elektrotekhnicheskogo zavoda Ministerstva putey
soobshcheniya (for Leshchinskiy).

(Electric relays) (Railroads---Electric equipment)

BOROK, V. M.

USSR/Mathematics - Cauchy's problem

Card 1/1 : Pub. 22 - 1/44

Authors : Borok, V. M.

Title : A solution of Cauchy's problem for certain systems of linear equations in partial derivatives.

Periodical : Dok. AN SSSR 97/6, 949-952, Aug 21, 1954

Abstract : A method of solving Cauchy's problem of normal equations is described. By this method, such equations as wave equation, telegraph equation, systems of Maxwell's equations, and Dirac's equations can be solved. Six references:(1938-1954)

Institution : Kiev State University of im. T. G. Shevchenko

Presented by : Academician A. N. Kolmogorov, May 31, 1954

BOROK, V.M. (Kiyev)

Solution of the Cauchy for certain types of systems of linear partial differential equations. Mat.sbor. 36 no.2:281-298 Mr-Ap '55.
(Differential equations, Partial) (MIRA 8:6)

BOROK, V.M.

SUBJECT USSR/MATHEMATICS/Differential equations CARD 1/2 PG - 647
 AUTHOR BOROK V.M.
 TITLE On a characteristic property of parabolic systems.
 PERIODICAL Doklady Akad.Nauk 110, 903-906 (1956)
 reviewed 3/1957

Let be given the system

$$(1) \quad \frac{\partial u(x,t)}{\partial t} = P(i \frac{\partial}{\partial x}) u(x,t),$$

$-\infty < x < \infty$, $u(x,t) = (u_1, \dots, u_N)$, where $P(i \frac{\partial}{\partial x})$ is a matrix the elements

of which are polynomials of $\frac{\partial}{\partial x}$ with constant coefficients. Let $\lambda_1(s), \dots, \lambda_N(s)$ be the characteristic roots of $P(s)$ and $\Lambda(s) = \max_{1 \leq j \leq N} \operatorname{Re} \lambda_j(s)$ ($s = \sigma + i\tau$).

According to Šilov the system (1) is parabolic if

$$\Lambda(\sigma) \leq -c_1 |\sigma|^h + c_2 \quad c_1, h > 0.$$

Let S_p be the class of correctness for the solutions of the Cauchy problem for (1) according to Šilov (Uspechi mat. Nauk 10, 4, 89, (1955)). The author proves two theorems: 1. If for the parabolic system (1) the Cauchy problem

Doklady Akad.Nauk 110, 903-906 (1956)

CARD 2/2

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$u(x,0) = u_0(x)$ is put and if $u_0(x) \in S_p$, then the solution for $t > 0$ is an arbitrarily often differentiable function. 2. If for an arbitrary system (1) it is well-known that the Cauchy problem is correct in a certain class of functions M , where M contains all bounded locally summable functions, and if the solution $u(x,t)$ of the Cauchy problem for $t > 0$ is continuously differentiable, then the system (1) is parabolic.

BOROK, V. M., Cand of Phys-Math Sci -- (diss) "On the system of linear equations in fractional derivatives with constant coefficients." Moscow 1957, 4 pp (Moscow State University im Lomonosov), 100 copies (KL, 30-57, 107)

12

BOROK, V.M. (g.Moskva)

Systems of linear partial differential equations with constant coefficients. Izv.vys.ucheb.zav.; mat. no.1:45-66 '57.

(MIRA 12:10)

(Differential equations, Partial)

AUTHOR: Borok, V. M.

20-114-4-2/63

TITLE: Reduction to a Single Equation of an Evolutional System of Linear Partial Differential Equations With Constant Coefficients
(Privedeniye evolyutsionnoy sistemy lineynykh uravneniy v chastnykh proizvodnykh s postoyannymi koeffitsiyentami k odnomu uravneniyu)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 682-685 (USSR)

ABSTRACT: This system of differential equations is as follows:
 $\partial u(x,t)/\partial t = P(\partial/\partial x) u(x,t)$. Here
 $u(x,t) = \{u_1(x,t), \dots, u_N(x,t)\}$, $x = \{x_1, \dots, x_n\}$ is true,
 and $P(\partial/\partial x)$ denotes a quadratic matrix of N-th order the elements of which are "polynominals" of the "variables" $\partial/\partial x_1, \dots, \partial/\partial x_n$ with constant coefficients. The author here proves the following two theorems:
Theorem 1: A system of partial differential equations of the above type is equivalent to one single partial differential equation with constant coefficients of the type

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Reduction to a Single Equation of an Evolutional System of 20.114-4-2/63
Linear Partial Differential Equations With Constant Coefficients

$$\frac{\partial^N u(x,t)}{\partial t^N} = \sum_{m=1}^N P_m \left(i \frac{\partial}{\partial x} \right) \frac{\partial^{N-m} u(x,t)}{\partial t^{N-m}} \quad \text{and to a system}$$

of several equations of the aforementioned form. In the latter case each equation of this system is integrated independently.

Theorem 2: If the system of equations first given is hyperbolic, the corresponding Cauchy problem cannot be reduced to Cauchy's problem for a system of first order.

There are 5 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: December 17, 1956, by S. L. Sobolev, Member, Academy of Sciences, USSR

SUBMITTED: December 14, 1956

Card 2/2

BOROK, V.M.

AUTHOR: Borok, V.M.

20-1-2/54

TITLE: The Reduction of a System of Linear Partial Differential Equations with Constant Coefficients to the Normal Form.
(Privedeniye lineynoy sistemy uravneniy v chastnykh proizvodnykh s postoyannymi koeffitsiyentami k sisteme normal'nogo tipa)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 1, pp. 13-16 (USSR)

ABSTRACT: The here-examined system with N equations has the form

$$\frac{\partial^{m_i} u_i(x_1, \dots, x_n, t)}{\partial t^{m_i}} = \sum_{j=1}^N \sum_{\langle m_0, \dots, m_n \rangle} A^{ij} \frac{\partial^{m_0 + \dots + m_n} u_j(x_1, \dots, x_n, t)}{\partial t^{m_0} \partial x_1^{m_1} \dots \partial x_n^{m_n}}$$
 $(i=1, \dots, N)$. The summation in this connection extends to all possible totalities of the indices $\langle m_0, \dots, m_n \rangle$. The number $p_0 = \inf k$ is designated as "reduced order" of this system. This number p_0 plays an important part in the problems of uniqueness and correctness of the solution of Cauchy's problem for the above-mentioned system. The author here gives the following 2 theorems and their proofs:

Theorem 1: The reduced order p_0 of the above-mentioned system can be determined by the formula $p_0 = \max_{1 \leq i \leq N} (p_i / i)$, where p_i signi-

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The Reduction of a System of Linear Partial Differential Equations with Constant Coefficients to the Normal Form. 20-1-2/54

finds the highest power in the totality of variables, $s_1, \dots, s_n$ - of one here-given polynomial.

Theorem 2: Cauchy's problem for every system of the above-mentioned type may be reduced to Cauchy's problem for the system of the normal type. From this the following conclusions may be drawn: When $p_0 = 0$ applies in the above-mentioned system, this system may be reduced to a system of ordinary differential equations. But when $p_0 = 1$, such a system can be reduced to a system of first order. This is the case, e.g. with hyperbolic systems. There is no figure.

ASSOCIATION: Moscow State University imeni M.V.Lomonosov (Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova)

PRESENTED: By A.N.Kolmogorov, Academician, January 22, 1957.

SUBMITTED: January 22, 1957.

AVAILABLE: Library of Congress

Card 2/2

AUTHOR: BOROK, V.M.

20-4-2/52

TITLE: Equivalent Systems of Linear Partial Equations With Constant Coefficients (Ekvivalentnyye sistemy lineynykh uravneniy v chastnykh proizvodnykh s postoyannymi koeffitsientami)

PERIODICAL: Doklady Akademii Nauk ^{SSSR}, 1957, Vol 117, Nr 4, pp 555-558 (USSR)

ABSTRACT: The author considers the systems

$$(1) \quad \frac{\partial u(x,t)}{\partial t} = P(i \frac{\partial}{\partial x}) u(x,t)$$

$$(2) \quad \frac{\partial v(x,t)}{\partial t} = Q(i \frac{\partial}{\partial x}) v(x,t),$$

where $u(x,t) = \{u_1(x,t), \dots, u_N(x,t)\}$, $x = (x_1, \dots, x_n)$ and for

$v(x,t)$ too, while P and Q are polynomials. Definition: (1) and (2) are called equivalent if they contain the same number of

unknown functions and if there exists an operator $T(i \frac{\partial}{\partial x})$

($T(i \frac{\partial}{\partial x})$ is a matrix of order N , $\det T(s) \neq 0$) such that if $u(x,t)$ is the solution of (1), then $v(x,t) = T(i \frac{\partial}{\partial x}) u(x,t)$ is the solution of (2).

Theorem: If (1) and (2) are equivalent, then the matrices P and Q are similar, and reversely.

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Equivalent Systems of Linear Partial Equations With Constant Coefficients

20-4-2/52

Theorem: If (1) is equivalent to (2), then every solution of (2) can be obtained by the application of an operator $T(i \frac{\partial}{\partial x})$ to any solution of (1).

Let T change every solution of (1) into a solution of (2) and let R change every solution of (2) into a solution of (1). Let $\tau(s)E = T(s)R(s)$. Definition: Two solutions u_1, u_2 of (1) are

called equivalent if $\tau^{m_1}(i \frac{\partial}{\partial x})E \cdot u_1(x, t) = \tau^{m_2}(i \frac{\partial}{\partial x})E \cdot u_2(x, t)$, where m_1, m_2 are integral and ≥ 0 . If U is the class of equivalent solutions of (1), then $V = T(i \frac{\partial}{\partial x})U$ is a class of equivalent solutions of (2).

Considering the system

$$(3) \quad \frac{\partial^{n_i} u_i(x, t)}{\partial t^{n_i}} = \sum_{j=1}^{N_1} \sum_{(m_s)} \Delta_{(m_s)}^{ij} \frac{\partial^{m_0 + \dots + m_n} u_j(x, t)}{\partial t^{m_0} \partial x_1^{m_1} \dots \partial x_n^{m_n}},$$

where $\sum_{(m_s)}$ denotes the summation over all possible $(m_0, \dots, m_n)$,

where $m_0 < n_j$, $m_k < M$, $k=1, \dots, n$, $\sum_{i=1}^{N_1} n_i = N$, then by addition of

Card 2/3 further unknown functions $u_{N_1+1}(x, t) \frac{\partial u_1}{\partial t}, \dots$ it can be brought

Equivalent Systems of Linear Partial Equations With Constant Coefficients 20-4-2/52

to the form (1). Definition: Two systems (3) are called equivalent if the systems (1) corresponding to them are equivalent.

Theorem: If (3) is elliptic in the sense of Petrovskiy, then also every equation of the system

$$\frac{\partial^{N_k} u_k(x, t)}{\partial t^{N_k}} = \sum_{m=1}^{N_k} P_{mk} \left(i \frac{\partial}{\partial x} \right) \frac{\partial^{N_{k-m}} u_k(x, t)}{\partial t^{N_{k-m}}}, \quad k=1, \dots, p, \quad \sum_{k=1}^p N_k = N,$$

which according to the author [Ref.2] is equivalent to (3), is elliptic too.

4 Soviet and 1 foreign references are quoted.

ASSOCIATION: Moscow State University im.M.V.Lomonosov (Moskovskiy gosudarstvennyy universitet im.M.V.Lomonosova)

PRESENTED: By I.G.Petrovskiy, Academician, 8 June 1957

SUBMITTED: 1 June 1957

AVAILABLE: Library of Congress

Card 3/3

V.M. Borok

16(1)
AUTHORS:

TITLE:

PERIODICAL:

ABSTRACT:

- Skorpya, I.A., University Lecturer, and
Kopylov, V.D., Scientific Assistant
Leningrad. Lectures 1957 at the Mechanical-Mathematical
Faculty of Moscow State University (Leningradskiy
obshchestvennyy nauchno-matematicheskiy fakul'tet
MSU)
- Periodical: Vestnik Moskovskogo Universiteta. Seriya matematiki, mekhanika,
astronomiya, fizika, khimiya, 1958, no. 4, pp. 241-246 (USSR)
- Abstract: The Leningrad lectures 1957 took place from October 17 -
October 31, 1957 and were dedicated to the 40-th anniversary
of the October revolution.
16. A.D. Gorkh, Lecturer and B.M. Budak, Lecturer:
Differential Methods for the Solution of Hyperbolic
Equations.
17. M.S. Babalov, Number of Calculation Operations for
the Solution of Elliptic Equations.
18. V.I. Izabed, Aspirant, Difference Method for the
Solution of the Scholer-System.
19. Professor Ye.B. Dykin, Master Processes and Semigroups.
20. A.G. Kostyuchenko, Candidate of Physical-Mathematical
Sciences, Decomposition of Differential Operators With
Respect to Generalized Eigenfunctions.
21. P.M. Jersin, Candidate of Physical-Mathematical Sciences,
Foundations of the Theory of Spherical Harmonics on Mani-
folds.
22. V.M. Borok, Aspirant, General Properties of Partial
Evolution Systems.
23. V.A. Uspenskiy, Candidate of Physical-Mathematical
Sciences, On Constructive Mathematical Analysis.
24. P.L. El'yakov, Lecturer, Reversal of Terms in Trigonometric Series.
25. I.G. Pavlovskiy, Academician and Ye.M. Landis, Senior
Scientific Assistant, On the Number of Boundary Cycles
of a Differential Equation of First Order With a Rational
Right Side.
- The contents of all the lectures have already been published.

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(2)

HORMANDER, Lars; FRANK, L.S. [translator]; BOROK, V.M., red.;
KOSTYUCHENKO, A.G., red.

[Theory of general partial differential operators] K teorii ob-
shchikh differentsial'nykh operatorov v chastnykh proizvodnykh.
Pod red. V.M.Borok i A.G.Kostiuchenko. Moskva, Izd-vo inostr.
lit-ry, 1959. 131 p. Translated from the English. (MIRA 15:5)
(Calculus, Operational)

16(1)

SOV/140-59-1-3/25

AUTHOR:

Borok, V.M.

TITLE:

On Numerical Characteristics of Systems Being Correct in the Sense of I.G.Petrovskiy (O chislennykh kharakteristikakh sistem, korrektnykh po I.G.Petrovskomu)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 1, pp 16-22 (USSR)

ABSTRACT:

Linear systems

$$(1) \quad \frac{\partial u(x,t)}{\partial t} = p(i \frac{\partial}{\partial x}) u(x,t)$$

are classified entirely by G.Ye.Shilov in [Ref 1]. The author shows how from the characteristic roots $\lambda_1(s), \lambda_2(s), \dots, \lambda_n(s)$ of the system (1) the genus ν , the exponent of parabolicity h and the reduced order p_0 of the system can be calculated (compare I.M.Gel'fand and G.Ye.Shilov [Ref 2]). The proposed method is a direct one: the author starts from the Puiseux expansions of $\lambda(s)$ in the neighborhood of the infinitely far point: $\lambda(s) = \alpha_0 s^{k_0} + \alpha_1 s^{k_1} + \dots + \alpha_p s^{k_p} + \dots$, and at first he shows that for parabolic systems the k_0 to k_p are integral

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On Numerical Characteristics of Systems Being Correct in the Sense of I.G.Petrovskiy SOV/140-59-1-3/25

and $h = \min_p k_p$, where the min is taken over all roots $\lambda(s)$.

Furthermore for correct systems p_0 is integral; if $p_0 < 1$, then the system consists of ordinary differential equations. For parabolic systems we have $\nu = \min_{\lambda(s)} (k_p - k_0 + 1)$.

There are 4 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova
(Moscow State University imeni M.V.Lomonosov)

SUBMITTED: March 13, 1958

Card 2/2

ACCESSION NR: AP4016496

S/0020/64/154/005/1007/1010

AUTHORS: Borok, V.M.; My*shkis, A.D.

TITLE: On solutions of difference equations valid in the whole plane

SOURCE: AN SSSR. Doklady*, v. 154, no. 5, 1964, 1007-1010

TOPIC TAGS: difference equation, linear difference equation, finite difference, functional equation, Cauchy problem

ABSTRACT: Given the difference equations

$$Lu \equiv \sum_{\lambda=1}^{\Lambda} a_{\lambda} u(n_1 + k_{\lambda 1}, \dots, n_m + k_{\lambda m}) = 0; \quad (1)$$

$$Lu = \begin{cases} 1 & \text{for } n_1 = \dots = n_m = 0, \\ 0 & \text{otherwise} \end{cases} \quad (2)$$

$$Lu = \psi(n_1, \dots, n_m). \quad (3)$$

where the unknown $u(n_1, \dots, n_m)$ and the given $(n_1, \dots, n_m)$ are integer-valued functions of m variables; $k_1, \dots, k_{\Lambda}$ ($1 \leq \lambda \leq \Lambda$)

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ACCESSION NR: AP4016496

fixed integers, and $a_\lambda (\neq 0)$ arbitrary complex constants. The aim is to give a priori conditions on the behavior of u and ψ at infinity, which imply the existence of a unique solution of (1), (2) and (3), valid in the entire plane, as well as solutions of the Cauchy problem for each equation. For $\bar{\zeta} = (\zeta_1, \dots, \zeta_m)$, let $Q(\bar{\zeta}) = \sum_{\lambda=1}^n a_\lambda \exp [i(\bar{\mu}_\lambda, \bar{\zeta})]$ where $\bar{\mu}_\lambda = (\mu_{\lambda 1}, \dots, \mu_{\lambda m})$, $(\bar{u}, \bar{v}) = \sum_{j=1}^m u_j v_j$, and let $d(Q) = \min_{Q(\bar{\zeta}+i\bar{\eta})=0} |\bar{\eta}|$ ($\bar{\zeta}_j, \eta_j$ real, $|\bar{\eta}| = \sqrt{\eta_1^2 + \dots + \eta_m^2}$) Theorem 1. If $d(Q) > 0$,

then equation (2) has a solution $\mathcal{E}(\bar{n}) = \mathcal{E}(n_1, \dots, n_m)$ satisfying an inequality of the form

$$|\mathcal{E}(\bar{n})| \leq A_\varepsilon \exp [-(d-\varepsilon)|\bar{n}|]. \quad (6)$$

for any positive ε . The required $\mathcal{E}(\bar{n})$ is given by the Fourier coefficient of $[Q(\bar{\xi})]^{-1}$.

$$\mathcal{E}(\bar{n}) = (2\pi)^{-m} \int_0^{2\pi} \dots \int_0^{2\pi} [Q(\bar{\xi})]^{-1} \exp [i(\bar{n}, \bar{\xi})] d\xi_1 \dots d\xi_m.$$

Lemma If $\varphi_1 \in \tilde{\Phi}_\alpha, \varphi_2 \in \tilde{\Phi}_{-|\alpha|-\varepsilon}$, for $\varepsilon > 0$, then $\psi \in \tilde{\Phi}_\alpha$ is defined and belongs to $\tilde{\Phi}_\alpha$.

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ACCESSION NR: AP4016496

Theorem 2. Let $d = d(Q) > 0$ and let $-d < \alpha < d$. Then, for any $\psi \in \Phi_\alpha$ equation (3) has a unique solution belonging to Φ_α . The solution is given by: $u|\bar{n}| = \xi * \psi$, where ξ is the function constructed in Theorem 1. Corollary. A necessary and sufficient condition for equation (1) to have a non-trivial bounded solution is that all roots of the trigonometric polynomial $Q(\xi)$ be real. The Cauchy problem for equation (3) consists in finding a solution $u(\bar{n})$ of (3) for values

$$-\infty < n_1, \dots, n_{m-1} < \infty, \quad N_0 \leq n_m < \infty \quad (-\infty < N_0 < \infty), \quad (11)$$

such

$$\left. \begin{aligned} u(\bar{n}', N_0) &= \varphi_1(\bar{n}'), \dots, u(\bar{n}', N_0 + k - 1) = \varphi_k(\bar{n}'), \\ (\bar{n}' &\stackrel{\text{def}}{=} (n_1, \dots, n_{m-1}); \quad -\infty < n_1, \dots, n_{m-1} < \infty), \end{aligned} \right\} \quad (12)$$

$\varphi_1(\bar{n}'), \dots, \varphi_k(\bar{n}')$ are given functions. Let $K'_m = \max_{(14)} K_{\lambda m}$, where $\sum_{K_{\lambda m} = K'_m} d_\lambda u(n_1 + K_{\lambda 1}, \dots, n_m + K_{\lambda m}), \dots$, $L'\mu =$

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ACCESSION NR: AP4015496

and let $d'(\mathcal{Q}')$ be defined for $\mathcal{Q}'$ as $d(\mathcal{Q})$ was for $\mathcal{Q}$. Theorem 3. Let $d' = d'(\mathcal{Q}') > 0$ and suppose that for some $\alpha \in (-d', d')$, all the functions $\varphi(\bar{n}), \dots, \varphi(\bar{n})$ as well as $\psi(\bar{n}, n_m)$ ($N \leq n_m < \infty$) belong to Φ_α (defined in the obvious way). Then the Cauchy problem (3), (12) in the half-plane (11) has a unique solution belonging to Φ_α . All the above results may be extended to systems of linear difference equations.

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences, SSSR)

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Card 4/4

BOROKAY, F.

Past and present organization of Lake Varosliget. p. 39
MELYEPITESTUDOMANYI SZEMLE. (Kozlekedesi Kiado) Budapest. Vol 6, no. 1, Jan 1956

SOURCE: EFAL, Vol 5, no. 7, July 1956

GENKIN, B.S.; GUMILEVSKIY, N.S.; DUBINKIN, N.P.; KACHER, Kh.A.; MEDINSKIY, L.N.;
FISH, A.Ya.; KHMIRCH, G.I.; BOROKH, V.I., redaktor.

[Technical norms and wages in the electrical industry] Tekhnicheskoe
normirovanie i zarabotnaya plata v elektropromyshlennosti. Moskva, Gos.
energ. izd-vo, 1953. 247 p. (MLBA 7:1)
(Electric industries) (Industrial management)

BOROKHOV A.I.

BOROKHOV, A.I., (Smolensk)

Value of the formalin test for the differential diagnosis and prognosis in various diseases. Klin.med. 35[ile.34] no.1 Supplement: 23 Ja '57. (MIRA 11:2)

1. Iz fakul'tetskoy terapevticheskoy kliniki (dir. - zasluzhennyy deyatel' nauki prof. K.V.Punin [deceased]) Smolenskogo meditsinskogo instituta.

(FORMALDEHYDE) (DIAGNOSIS)

BOROKHOV, A.I.

Diagnosis of subdued forms of bronchiectasis. Vrach.delo no.8:867
Ag '58 (MIRA 11:8)

1. Fakul'tetskaya klinika vnutrennikh bolezney (zav. - prof.P.N. Stepanov)
Smolenskogo meditsinskogo instituta.
(BRONCHIECTASIS)

BOROKHOV, A. I., Cand Med Sci --- (diss) "Changes in the external respiration function in patients with chronic nonspecific processes in the lungs under the influence of some medicinal and diagnostics procedures." Smolensk, 1960. 28 pp; (Smolensk State Medical Inst); 298 copies; price not given; (KL, 23-60, 127)

BOROKHOV, A.I. (Smolensk)

External respiratory changes under the influence of bronchography in patients with suppurative pulmonary processes. Klin. med. 39 no.4:77-80 '61. (MIRA 14:4)

1. Iz kliniki fakul'tetskoy terapii (zav. - prof. P.N. Stepanov) Smolenskogo meditsinskogo instituta.
(LUNGS—DISEASES) (RESPIRATION)

BOROKHOV, Aleksandr Isaakovich; VALIKOVA, K., red.; SAKHONENKO, Ye.,
tekhn. red.

[Clinical aspect of the chronic nonspecific inflammatory and
sclerotic process within the lungs]Klinika khronicheskogo ne-
spetsificheskogo vospalitel'no-skleroticheskogo protsessa v
legkikh. Smolensk, Smolenskoe knizhnoe izd-vo, 1962. 258 p.
(MIRA 16:3)

(LUNGS--DISEASES)

BOROKHOV, A.I., dotsent

Antibodies to pulmonary tissues in a chronic nonspecific inflammatory sclerotic process in the lungs. Trudy SMI 16:24-28 '63.

(MIRA 18:1)

1. Iz kafedry gosspital'noy terapii (zav. - dotsent I.P.Balovnev) i bakteriologicheskoy laboratorii 1-oy klinicheskoy bol'nitsy Smolenska (glavnyy vrach M.K.Usachev). Nauchnyy konsul'tant prof. V.A.Yudenich.

BOUCE, V.M., DEINIKHMAN, Ya.I.

Causing problem for parabolic systems degenerating at infinity.
Not. zap. VNIIG 1964-1965 864. (SERIAL 17:10)

BORDEL, . . .

Antibodies and blood proteins in chronic nonspecific processes in
the lungs. Vest. AMN SSSR 20 no. 7: 36-47 '65.

(MIRA 18:8)

1. Smolenskiy meditsinskiy institut.

BOROKHOV, D.Z.; KORSHEV, B.S.

Industrial trauma in workers of the Baydzhansay Mine
Administration. Zhurav. kazakh. 21 no.12:13-15 '61. (MIRA 15:3)

1. Iz mediko-sanitarnoy chasti Bayzhansayskogo rudoupravleniya
i travmatologicheskogo otdeleniya Yuzhno-Kazakhstanskoy
oblastnoy bol'nitsy.

(BAYDZHANSA--MINE ACCIDENTS)

BOROKHOV, I.M.; GANSHIN, A.S.; MAKAR'IN, N.M., inzh., red.; PROKOF'YEVA,
L.G., red.izd-vs; UVAROVA, A.F., tekhn.red.

[Fibrous and combined gland packings] Voloknistye i kombiniro-
vannye sal'nikovye nabivki. Moskva, Gos.nauchno-tekhn.izd-vo
mashinostroit.lit-ry, 1959. 181 p. (MIRA 12:12)
(Packing (Mechanical engineering))

BOROKHOV, M.Kh. (Tashkent)

Comparative data on pathways of the spread of inflammatory
processes of the foot and leg in clinical practice and experi-
ment. Eksp.khir. 4 no.3:49-50 My-Je '59. (MIRA 12:8)
(INFLAMMATION)

BOROKHOV, M.Kh., assistant

Case of invagination of the vermiform process into its own lumen.
Med. zhur. Uzb. no.4:53 Ap '61. (MIRA 14:5)

1. Iz kafedry obshchey khirurgii (zav. - prof. S.A.Geller) pediatriche-
skogo i sanitarno-gigiyenicheskogo fakul'tetov Tashkentskogo gosudar-
stvennogo meditsinskogo instituta.

(APPENDIX (ANATOMY)--DISEASES)

BOROKHOV, M. Kh., Cand Med Sci -- "Paths of ~~the~~ spreading of the injection mass and ~~the~~ inflammatory processes on the foot and shin. (Experimental clinical study). Karaganda, 1960. (Min of Health KazSSR. Karaganda State Med Inst). (KL, 1-61,206)

-365-

BORCKHOV, M.Kh., kand. med. nauk

Morphology of the venous system of the foot and leg. Med. zhur.
Uzb. no.6:70-72 Je'63 (MIRA 17:3)

1. Iz kafedry operativnoy khirurgii s topograficheskoy anatomiyei (zav. - prof. N.A. Stekol'nikov) Tashkentskogo meditsinskogo instituta.

BOROKHOV, M. Kh., kand. med. nauk; BARTNOVSKAYA, L. M.;
YADGAROV, Ye. M.

Prevention of industrial injuries in some textile enterprises
in the Uzbek S.S.R. Med. zhur. Uzb. no.6:10-13 Je '62.
(MIRA 15:7)

1. Iz kafedry obshchey khirurgii sanitarnogo i pediatricheskogo
fakul'tetov (zav. - prof. A. M. Geller) Tashkentskogo gosudarst-
vennogo meditsinskogo instituta.

(UZBEKISTAN--TEXTILE INDUSTRY--SAFETY MEASURES)

LEGEZA, V.D., kand.tekhn.nauk; BOROKHOV, P. Kh.

Adoption of sinker drills in the mines of the Nizhniy Tagil metallurgical combine. Gor. zhur. no.4:30-32 Ap '60. (MIRA 14:6)

1. Sverdlovskiy gornyy institut (for Legeza). 2. Nachal'nik burovykh rabot shakhty Magnetitovaya, Vysokogorskiy rudnik (for Borokhov).
(Nizhniy Tagil region—Rock drills)

BOROKHOVICH, Aleksandr Isaakovich; NOSYREV, Boris Aleksandrovich; TSITSIN, M.A., redaktor; KEL'NIK, V.P., redaktor; KEL'NIK, V.P., redaktor; KOVALENKO, N.I., tekhnicheskii redaktor

[Testing and adjusting piston compressors in mines] Ispytanie i naladka porshnevnykh kompressorov na rudnikakh. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 212 p. (MLRA 8:4)
(Air compressors) (Mining machinery)

SOV/124-58-11-12638

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 100 (USSR)

AUTHOR: Borokhovich, A.I.

TITLE: Investigation of the Total Losses in Two-stage Centrifugal Spiral Mining Pumps and Their Minimization (Issledovaniye summarnykh poter' v dvukhstupenchatykh rudnichnykh tsentrobezhnykh spiral'nykh nasosakh i usloviy polucheniya ikh minimuma)

PERIODICAL: Tr.i materialy. Sverdl. gorn. in-t, 1956, Nr 26, pp 177-202

ABSTRACT: The author examines the conditions at which various centrifugal spiral pumps attain their respective maximal efficiency and the dimensions and weight of the pumps attain their minimums. He determines the dependence of the total losses in a pump upon the magnitude of the delivery, the peripheral speed corresponding to the outer diameter of the impeller, the shaft rpm, and the design the impeller, i. e., the ratio of the impeller diameter to the diameter of the inlet circumference. A computation procedure is adduced for a two-stage spiral pump, also a technique for the determination of the hydraulic, volumetric, and mechanical losses in terms of various factors. A detailed examination is made of the subject of

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SOV/124-58-11-12638

Investigation of the Total Losses in Two-stage Centrifugal Spiral (cont.)

the determination of the optimal rpm. It is concluded that a saving in pump weight, an improvement in operational performance, and a reduction in the operational cost of mine-shaft drainage can be ensured by the introduction of two-stage spiral pumps with a specific speed of 109 rpm, which afford the highest efficiency and the smallest size. In view of the small pressure ratio realizable with these pumps, it is necessary to deliver the water to them with a pressure head of 1 to 4 m.

Bibliography: 9 references.

Yu. M. Savvin

Card 2/2

~~BOROKHOVICH~~ Aleksandr Isaakovich; ILYUKHIN, A.I., inzh., red.; TSYMBALIST,
N.M., red. izd-va; ~~ILY~~, N.M., tekhn.red.

[Maintenance and repair of mine equipment; a textbook for schools
and courses for master workers] Eksploatatsiia i remont oborudovaniia
shakht i rudnikov; uchebnoe posobie dlia shkol i kursov masterov.
Sverdlovsk, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi
metallurgii, 1958. 478 p. (MIRA 12:3)

(Mining machinery--Maintenance and repair)

FRGLOV, Petr Prokhorovich, dotsent. Prinimali uchastiye: ZVYAGIN, V.S., dotsent; PETROV, I.P., dotsent. VESKLOV, A.I., prof., doktor tekhn.nauk, retsensent; BOROKHOVICH, A.I., dotsent, retsensent; KROMITSEVICH, K.I., otv.red.; D'YAKOVA, G.B., red.izd-va; SABITOV, A., tekhn.red.; LOMILINA, L.N., tekhn.red.

[Mine compressor equipment] Rudnichnoe kompressornoe khoziaistvo. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 227 p. (MIRA 14:4)

(Air compressors)

BOROKHOVICH, A. I., dotsent, kand. tekhn. nauk; GUSEV, V. V., inzh.

Some results of testing main mine fans. Ugol' 38 no:4:55-56
Ap '63. (MIRA 16:4)

(Chelyabinsk Basin--Fans, Electric--Testing)

BOROKHOVICH, A.I., kand.tekhn.nauk; GUSEV, V.V., inzh.

Results of tests of pneumatic mine networks. Gor. zhur. no.6:70-71.
Je '63. (MIRA 16:7)

(Air compressors—Testing)

BOROKHOVICH, A.I., kand.tekhn.nauk

Relation between the time of wearing of the working wheels of pumps with identical rates of speed and the number and speed of rotation of the shaft. Izv. vys. ucheb. zav.; gor. zhur. 6 no.3:111-113 '63. (MIRA 16:10)

1. Magnitogorskiy gornometallurgicheskiy institut. Rekomendovana kafedroy gornoy mekhaniki.

BOBOKHOVICH, A.I., dotsent

Results of determining the effect of clarifying polluted mine waters on models of settling tanks. Izv. vys. ucheb. zav.; gor. zhur. 6 no.4:111-116 '63. (MIRA 16:7)

1. Magnitogorskiy gornometallurgicheskiy institut. Rekomendovana kafedroy gornoy mekhaniki.
(Mine water--Purification)

BOROKHOVICH, A.I., kand. tekhn. nauk; GUSEV, V.V., inzh.

Recording of performance indicating diagrams of 160V-28/8
compressors. Prom. energ. 18 no.6:38-39 Je '63. (MIRA 16:7)

(Compressors)

BOROKHOVICH, A.I., kand. tekhn. nauk; GUSEV, V.V., inzh.

Results of studying 160V-20/8 compressors. Gor. zhur. no.7:
70-71 JI '63. (MIRA 16:8)

BOROKHOVICH, A.I., kand. tekhn. nauk

Cleaning lined mine drainage pipes in the Karabash mines.
Gor. zhur. no.11:64-65 N '63. (MIR 17:6)

1. Magnitogorskiy gornometallurgicheskiy institut.

ZURKOV, P.E., doktor tekhn. nauk, zasluzhennyy deyatel' nauki i tekhniki
RSFSR; BOROKHOVICH, A.I., kand. tekhn. nauk

Type and size of pumping stations for coal and ore mines.
Shakht. stroi. 8 no.4:8-9 Ap'64 (MIRA 17:7)

1. Magnitogorskiy gornometallurgicheskiy institut.

BOROKHOVICH, A.I., kand. tekhn. nauk; GUSEV, V.V., inzh.

Increasing the reliability of the operation of oil systems
in mine hoisting machinery. Shakht. stroi. 8 no.4:15 Ap'64
(MIRA 17:7)

1. Magnitogorskiy gornometallurgicheskiy institut.

~~SECRET~~
BORONOVICH, A.I., kandi. tekhn. nauk; GUSIN, V.V., gornyy inzh.

Air distribution in nine piston compressors. Ger. zhur. no. 7:46
Jl '64. (MIRA 17:10)

1. Magnitogorskiy gorno-metallurgicheskiy institut.

BOROKHOVICH, A.I., kand.tekhn.nauk; VESELOVSKAYA, Ye.S., inzh.

Cleaning contaminated water from mechanical admixtures in a
hydrocyclone. Gor.zhur. no.3:74-75 Mr '65. (MIRA 18:5)

1. Magnitogorskiy gorno-metallurgicheskiy institut.

BOROKHOVICH, A.I., kand. tekhn. nauk

One of the methods of controlling the performance of a piston compressor. Gor.zhur. no.8:33-34 Ag '65.

(MIRA 18:10)

1. Magnitogorskiy gornometallurgicheskiy institut.

BOROKHOVICH, Aleksandr Isaakovich, kand.tekhn.nauk, dotsent; AKHLYUSTIN,
Veniamin Konstantinovich, kand.tekhn.nauk, dotsent

Electric power supply of deep mines. Izv.vys.ucheb.zav.; elektromekhanika
8 no.6:708-714 '65. (MIRA 18:8)

1. Zaveduyushchiy kafedroy gornoy mekhaniki Magnitogorskogo
gornometallurgicheskogo instituta (for Borokhovich). 2. Kafedra
gornoy elektrotekhniki Magnitogorskogo gornometallurgicheskogo
instituta (for Akhlyustin).

BOROKHOVICH, B. C.

Agriculture & Plant & Animal Industry

Agricultural practice of the leading potato growers. Leningradskoe gazetno-zhurnal'noe i knizhnoe izd-vo, 1950.

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BOROKHOVICH, B O

317N/5
632.94
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Opyt ovoshchevodov leningradskoy oblasti (Experience of
vegetable gardeners in the Leningrad Oblast) Sostaviteli B. O.
Borokhovich i N/ P. Petrov. Moskva, Sel'khozgiz, 1955.
219 p. illus., ports.

BOROKHOVICH, G.M.

Let us help village workers to fulfill the resolution of the September Plenum of the Central Committee of the Communist Party of the Soviet Union. Vest.sviazi 14 no.1:21 Ja '54. (MLRA 7:5)

1. Nachal'nik oddela elektrosvyazi Nikolayevskogo oblastnogo upravleniya svyazi. (Telephone)

AUTHORS: SOV/111-58-4-19/34
Ishin, D.A., Chief of the Nikolayev Oblast' Communication
Administration; Kabakov, N.P., Chief Engineer of the Admin-
istration; Borokhovich, G.M., LTU-Chief

TITLE: The Operational-Technical Maintenance of Interdistrict Com-
munication Lines from a Technical Line Service Point (Eks-
pluatatsionno-tekhnicheskoye obsluzhivaniye vnutrirayonnoy
svyazi lineyno-tekhnicheskim uzlom)

PERIODICAL: Vestnik svyazi, 1958, Nr 4, p 22 - 25 (USSR)

ABSTRACT: The article deals with the experience in organizing opera-
tional-technical maintenance work of interdistrict commu-
nication lines in the Nikolayev Oblast'. The maintenance
crews are concentrated in so-called LTU (Lineyno-tekhnichesk-
kiy uzol - Technical Line Service Point) and a diagram shows
the organization of such a service point. There are two
tables, one organizational chart and one photo.

ASSOCIATION: Nikolayevskoye oblastnoye upravleniye svyazi (Nikolayev
Oblast' Communication Administration)
1. Communication systems--Operation 2. Communication systems
--Maintenance

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BOROKHOVICH, G.M.

Technical laboratory at the Nikolayev line-maintenance center.
Vest. svyazi 18 no. 8:27 Ag '58. (MIRA 11:8)

1. Nachal'nik Nikolayevskogo lineyno-tekhnicheskogo uzla.
(Nikolayev--Telecommunication)

BOROKHOVICH, G.M.

Rural telephone communication systems should receive much attention
and care. Vest, svyazi 24 no.6:28-29 Je '64. (MIRA 17:11)

1. Nachal'nik Nikolayevskoy oblastnoy direktai radiotranslyatsionnoy
seti.

BOROKHOVICH, I.I.; DYZHINA, I.I.

Postwar housing construction in Rostov-on-Don. Gig. i san. 21 no.9:
65-66 S '56. (MLRA 9:10)

1. Iz Rostovskoy-na-Donu gorodskoy sanitarno-epidemiologicheskoy
stantsii i kafedry kommunal'noy gigiyeny Rostovskogo meditsinskogo
instituta.

(HOUSING

in Russia, post-war constructions)

BOROKHOVICH, V.I., doktor

Metreuryxis for late artificial abortion based on medical indications.
Azerb.med.zhur. no.9:69-71 '58 (MIRA 11:11)

1. Zaveduyushchiy akusherskim otdeleniyem bol'ritsy im. Semashko
(glavvrach A.A. Ismailov) :
(ABORTION)

BOROKHOVICH, V.I.

Our experience in treating the umbilical cord according to
V.M.Rogovin's method. Azerb.med.zhur. no.8:84-86 Ag '59.
(MIRA 12:11)

(UMBILICUS)

BOROKHOVICH, V.I.

Cesarean section as revealed by materials of the Obstetrical Section
of the Semashko Hospital from 1953-1960 Ap '61. Azerb. med. zhur.
no. 4:51-55 Ap '61. (MIRA 14:4)

1. Iz rodil'nogo otdeleniya bol'nitsy imeni Semashko (glavnyy
vrach - A.A. Ismaylov).

(CESAREAN SECTION)

BOROKHOVICH, Ya.P.; ALIKSEYEV, A.V.; TIKHONOVA, Ye.M., red.;
MAKHOVA, N.N., tekhn. red.; BALLOD, A.I., tekhn. red.

[Computers and programming] Matematicheskie mashiny i programirovanie. Moskva, Sel'khozizdat, 1963. 299 p.
(MIRA 17:3)

ALEKSEYEV, A.V.; BOROKHOVICH, Ye.P.; RAKITINA, Ye.D., red.;
TIKHONOVA, Ye.M., red.

[Calculating machines and their use in accounting] Schet-
nye mashiny i ikh primeneniye v uchete. Moskva, Izd-vo
"Kolos," 1964. 326 p. (MIRA 17:5)

PUKOV, G.Ye. [Pukhov, H.IE.]; BOROKOVSKIY, B.A. [Borkovs'kyi, B.A.]; STEPANOV,
A.Ye. [Stepanov, A.IE.]

Method of continuous operator modeling. Dop. AN URSR no.3:325-331
'63. (MIRA 17:10)

1. Institute kibernetiki AN UkrSSR. 2. Chlen-korrespondent AN UkrSSR
(for Pukhov);

BOROKHOVSKIY, L., inzhener.

~~Enterprises of the flour, meal and feed industry must have high-~~

grade equipment. Muk.-elev.prom. 20 no.7:17-18 J1 '54.(MLRA 7:8)

1. Gosudarstvennyy institut Promsternoprojekt.
(Grain milling machinery)

~~BOBOKHOVSKIY, I.~~ inzhener; SHIPETIN, R., inzhener.

Standard shop for sack repairing. Muk.-elev.prom. 20 no.11:7-9
N 154. (MLRA 8:3)

1. Gosudarstvennyy institut Promzernoprojekt.
(Bagging)

BOROKHOVSKIY, L.

BOROKHOVSKIY, L., inzhener.

Improve the training of your specialists. Muk.-elev.prom. 20
no.12:29 D '54. (MIRA 8:3)

1. Gosudarstvennyy institut Promsloboyproyekt.
(Mill and factory buildings)

~~BOBOKHOVSKIY, L.A.~~; SINTSEROV, A.D., inzhener, redaktor; GEL'MAN, D.Ya.,
redaktor; GOLUNKOVA, L.A., tekhnicheskiy redaktor

[Preparation and assembling of self-flowing pipes and air ducts for
flour and grist mills equipment and supplies] Izgotovlenie i montazh
sanotekhnicheskikh turbin i vozdukhovodov na mel'nitsakh i krupozavodakh.
Pod red. A.D.Sintserova. Moskva, Izd-vo tekhn. i ekon. lit-ry po
voprosam zagotovki. 1955. 75 p. (MLRA 9:7)
(Flour mills)

BOROKHOVSKIY, L., inzhener.

Standard plans for flour mills of grain procurement stations.
Muk.-elev.prom. 21 no.12:15-16 D '55. (MLRA 9:4)

1.Gosudarstvennyy institut Prensneroprojekt.
(Flour mills)

BOROKHOVSKIY, L., inzhener.

Building a grain milling and baking combine in Kabul. Muk.-elev.
prom. 22 no.3:6-7 Mr '56. (MLRA 9:7)

1. Pishchepromzernoproyekt.
(Kabul, Afghanistan--Grain milling) (Bakers and bakeries)

BOROKHOVSKIY, L., inzhener.

Plan for milling with three roller mills at procurement stations.
Muk.-elev.prom. 22 no.7:20-23 J1 '56. (MIRA 9:9)

1.Premzernaeproyekt.
(Flour mills)

BOROKHOVSKIY, L.

KASHCHNYEV, I., inzhener; BOROKHOVSKIY, L.

Plants for processing seed corn. Muk. -elev.prom.22 no.11:5-8
N '56. (MIFA 10:1)

1. Promzernoprojekt.
(Corn (Maize)) (Grain elevators)

Perkhovskiy, L.
FAYNGERSH, A., inzh.; ~~PERKHOVSKIY, L.~~

Transportation of flour in folding containers. Muk.-elev. prom. 23
no.10:22-23 0 '57. (MIRA 11:1)

1. Promzernoprojekt.
(Flour--Transportation)

BOROKHOVSKIY, L., inzh.

Standard plans for plants where hybrid and certified corn
is processed. Muk. elev. prom. 24 no.11:4-8 N '58. (MIRA 11:12)

1. Promernoproyekt.
(Corn (Maize))

BOROKHOVSKIY, L., inzh.

Plan for a corn processing plant with the capacity of 750
tons in a season. Muk.-elev.prom. 25 no.9:23-25 S '59.
(MIRA 12:12)

1. Gosudarstvennyy institut Promzernoproyekt.
(Corn(Maize))

BOROKHOVSKIY, L., inzh.

Building plan for flour mills with small-sized equipment. Muk.-elev.
prom. 25 no.11:27-28 N '59 (MIRA 13:3)

1. Gosudarstvennyy institut Promsernoproyekt.
(Flour mills)

BOROKHOVSKIY, L., inzh.

Increasing the productive capacity of hybrid and certified corn
processing plants and sections. Muk.-elev. prom. 27 no.8:8-10
Ag '61. (MIRA 14:7)

1. Gosudarstvennyy institut Promzernoproyekt.
(Corn (Maize)—Storage)

ACCESSION NR: AP4042012

S/0057/64/034/007/1328/1336

AUTHOR: Borokin, P.M.

TITLE: Use of free nuclear precession in the earth's magnetic field for measurement of the flow rate and velocity of certain fluids

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.7, 1964, 1328-1336

TOPIC TAGS: flow rate, flow measurement, fluid flowmeter, nuclear magnetic resonance

ABSTRACT: A previously disclosed method (P.M.Borodin, Avtorskoye svidetel'stvo po zayavke No.810732,1962) for measuring flow velocities by nuclear precession in the earth's magnetic field is described, and experimental tests are reported. The conduit carrying the fluid contains a loop of constant radius of curvature about which is wound a toroidal solenoid. The nuclei of the fluid within the loop, which must contain material capable of giving a strong nuclear magnetic resonance signal, are aligned by the magnetic field of the toroidal winding. The magnetizing field is then cut off and the emf induced in the winding by the precession of the nuclei in the earth's field is observed. If the fluid is stationary, the frequency of the induced

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emf is that of the free precession of the nuclei in the earth's magnetic field; if the fluid is flowing, the angular velocity with which the fluid traverses the loop is added or subtracted from the angular frequency of the nuclear precession. The frequency shift is observed by comparing the frequency with that of nuclear precession in a similar loop containing stagnant fluid. The sensitivity can be doubled by causing the fluid successively to traverse two similar loops in opposite directions and comparing the frequencies of the nuclear magnetic precession signals from these two loops. For best results the time of observation (between successive magnetizations) should be of the order of the spin-lattice relaxation time and shorter than the time required for the fluid to traverse the loop. If the flow rate is too great to permit both these conditions to be met, a spiral loop can be employed. Flow rates of water from 50 to 1000 cm³/sec were measured by the above method as a test of its practicability. Two types of measuring loop were tested: a simple loop with a mean radius of 5.5 cm, and a two turn spiral loop of which the mean radius increased from 4.2 to 7.5 cm. Both types were tested in both the single loop with static comparison and the two loop configurations. It is concluded that flow velocities of 10 cm/sec can be measured with an accuracy of 2% and velocities of 100 cm/sec with an accuracy of 0.2%. The obvious advantages and disadvantages of the method are listed. The author considers it his duty to express his gratitude to A.V. Mel'nikov.

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nikov, Ye.N.Sventitskiy and V.I.Chizhik for their active participation in the experimental test of the method." Orig.art.has: 16 formulas and 5 figures.

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Knife for trimming plaster models. Stomatologia no.3:54 My-Je
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(DENTISTE/, apparatus and instruments,
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THE SIGNIFICANCE OF BODY POSITION IN THE DE-
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